

REMARKS

The Present Invention

The present invention is directed to a lipxygenase from *Cucumis sativus* comprising the amino acid sequence of SEQ ID NO: 1 with a substitution of one or more recited amino acids of SEQ ID NO: 1.

The Pending Claims

Claims 21 and 23-25 are pending and are directed to the lipxygenase described above.

The Amendments to the Specification and Abstract

A substitute specification, including the abstract, is submitted herewith. The substitute specification has been filed to correct the line spacing of the specification and abstract as filed, to reformat Tables 1 and 2 for ease of reading, to insert page numbers, and to insert paragraph numbers. Accordingly, the substitute specification contains no new matter. A marked-up copy of the substitute specification showing the changes to the specification is submitted herewith.

A sequence listing (paper and computer readable copies) and certification for the amino acid sequence set forth at Fig. 5 (SEQ ID NO: 1), and the nucleic acid sequences set forth at paragraph [0035] (SEQ ID NO: 2 and SEQ ID NO: 3) of the substitute specification are submitted concurrently herewith. The specification has been amended to include reference to SEQ ID NOS: 1, 2, and 3. The abstract has been amended to replace the heading "Summary" with the heading "Abstract." Accordingly, the amendments to the specification and abstract add no new matter to the application.

The Amendments to the Claims

Claims 15-20 and 26-46 have been cancelled as being drawn to a non-elected invention. Applicants reserve the right to pursue any cancelled subject matter in a continuation, continuation-in-part, divisional, or other application. Cancellation of any subject matter should not be construed as abandonment of that subject matter. Claim 21 has been rewritten in independent form, and has been amended to incorporate the subject matter of cancelled claims 15 and 16. Claims 21 and 23-25 also have been amended to include reference to the sequence listing denoted "SEQ ID NO: 1," which is set forth in Fig. 5. Claims 23, 24, and 25 have been amended to incorporate the subject matter of cancelled

claims 17, 18, and 19, respectively, and to depend from claim 21, either directly or indirectly. Accordingly, no new matter has been added by way of these amendments.

The Amendments to the Drawings

The Examiner is requested to approve the accompanying replacement drawings. Fig. 5 has been amended to include the identifier "SEQ ID NO: 1."

The Office Action

The Office Action raises the following concerns:

- (a) the specification and abstract are objected to for being single-spaced,
- (b) the specification is objected to for failing to comply with the Sequence Rules,
- (c) claims 21-25 are objected to for depending on non-elected base claims,
- (d) claims 21-25 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite,
- (e) claims 21-25 are rejected under 35 U.S.C. § 112, first paragraph, for an alleged lack of written description and for alleged non-enablement, and
- (f) claim 21 is rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Feussner et al., *FEBS Letters*, 367, 12-14 (1995).

Reconsideration of these objections and rejections is hereby requested.

Discussion of Objections to the Specification and Abstract

The Office Action has objected to the Specification and Abstract as filed because the text thereof is single-spaced. A substitute specification, including the abstract, is submitted herewith to correct the line spacing.

The specification has also been objected to for failing to provide a sequence listing for the amino acid sequence set forth in Fig. 5, and the nucleic acid sequences set forth at paragraph [0035]. A sequence listing (paper and computer readable copies) and certification for these sequences are submitted concurrently herewith. Accordingly, Applicants respectfully request that the objections to the specification and abstract be withdrawn.

Discussion of Objection to the Claims

The Office Action objects to claims 21-25 for depending on non-elected base claims. As discussed above, claim 21 has been rewritten in independent form incorporating the subject matter of claims 15 and 16, and claims 23-25 have been amended to depend from

claim 21, either directly or indirectly. Accordingly, Applicants respectfully request that the objection to the claims be withdrawn.

Discussion of Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 21-25 have been rejected under Section 112, second paragraph, as allegedly being indefinite. Specifically, the Office Action contends that it is unclear what would be considered a wild-type lipoxygenase, inasmuch as different plant species will encode different plant lipoxygenase enzymes. The Office Action further contends that claims 22-25 are indefinite because the claims do not provide any particular sequence as a reference for the specific amino acid substitutions recited therein.

Claim 21 has been amended to refer to SEQ ID NO: 1, which is the lipoxygenase amino acid sequence from *Cucumis sativus* set forth in Fig. 5, and to incorporate the subject matter of cancelled claims 15 and 16. Thus, claim 21, and claims 23-25 depending therefrom, are clear. Accordingly, the Section 112, second paragraph, rejections should be withdrawn.

Discussion of Rejections Under 35 U.S.C. § 112, First Paragraph

Claims 21-25 have been rejected under Section 112, first paragraph, for an alleged lack of written description and for non-enablement. These rejections are traversed for the reasons set forth below.

The Office Action contends that, other than the amino acid sequence set forth in Fig. 5 (SEQ ID NO: 1), the specification does not disclose the structure that would define a wild-type plant lipoxygenase, or the structure that defines any lipoxygenase from *Cucumis sativus*. Moreover, the Office Action contends the specification only is enabling for the lipoxygenase set forth in Figure 5 having amino acid substitutions in the region of amino acid positions 527-536 and/or 593-602.

Claim 21 has been amended to refer to SEQ ID NO: 1, which is the lipoxygenase amino acid sequence from *Cucumis sativus* set forth in Fig. 5. Accordingly, the subject matter of claim 21, and claims 23-25 depending therefrom, is adequately described and enabled by the present specification. As such, the Section 112, first paragraph, rejections should be withdrawn.

Discussion of Rejection Under 35 U.S.C. § 102

Claim 21 has been rejected under Section 102(b) as allegedly being anticipated by Feussner et al., *FEBS Letters*, 367, 12-14 (1995). This rejection is traversed for the reasons set forth below.

Claim 21, as amended, is directed to a lipxygenase from *Cucumis* comprising the amino acid sequence of SEQ ID NO: 1 with a substitution of one or more amino acids in the region of amino acid position 527 to 536 and/or 593 to 602 of SEQ ID NO: 1. The Feussner reference does not disclose or suggest a lipxygenase as presently claimed. Accordingly, the subject matter defined by claim 21, and claims 23-25 depending therefrom, is novel in view of the prior art. As such, the Section 102 rejection should be withdrawn.

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned agent.

Respectfully submitted,



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